CLAIMS

I claim:

1. A digital elevation knob device, comprising:

a generally cylindrical, rotating ribbed knob;

a non-rotating generally cylindrical scope mount having a longitudinal axis coincident with that of said ribbed knob, and a longitudinally arranged pair of flanges, said scope mount being adapted and configured for receiving said ribbed knob and mounting said knob to a rifle scope; and

a computer housing, said housing comprising a programmable computer, a display screen disposed on an upper front portion of said housing for indicating readout data, a plurality of push buttons disposed on a lower front portion of said housing for selection of functions and entering of numerical parameters, an interface plug for receiving an exterior data entry device, and a power source;

whereby a rifleperson can enter data into the computer to obtain the optimum elevation setting for firing the rifle at a target.

LITMAN LAW OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

2. The digital elevation knob device according to claim 1, further comprising a target viewing element disposed inside of the tube of the rifle scope, a target adjuster screw secured to the bottom of said knob and positioned above the target viewing element, a positioning spring disposed beneath and supporting the target viewing element and a displacement sensing element for determining the displacement of the target viewing element.

3. The digital elevation knob device according to claim 2, wherein said displacement sensing element is selected from the group consisting of a magnetic tape coupled to a pair of magnetic flux transducers, optical sensors, optical encoders, precision potentiometers and absolute multi-turn sensors.

4. The digital elevation knob device according to claim 2, further comprising a weapon lay sensor located proximate to said displacement sensing element, wherein said weapon lay sensor determines if the rifle is canted or inclined.

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

5. The digital elevation knob device according to claim 1, wherein said display screen is selected from the group consisting of liquid crystal display screens, laser emitting diode screens and plasma screens.

6. The digital elevation knob device according to claim 1, wherein said power source is selected from the group consisting of internal batteries and external D.C. power sources.

7. The digital elevation knob device according to claim 1, wherein said programmable computer further comprises:

a communications port for receiving input data in said computer;

at least one signal conditioning unit for receiving and formatting signals delivered to the programmable computer from the displacement sensing element and the weapon lay sensor;

an input and output control unit that controls the timing and flow of input data and output data in the programmable computer;

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

a data storage unit for storing ballistic tables, operating system data, and application programs for trajectory and setup routines;

a central processing unit for receiving processing input data and conditioned signals from the control unit and processing the input data with stored data retrieved from the data storage unit;

a power control unit for controlling the settings of the knob device, wherein the power control unit can change the status of the knob device to a sleep mode, a charging mode, a wake-up mode and a power mode, and regulates the power supplied by said power source; and

a readout unit that supplies readout information to said display screen;

whereby the input control transmits signals and data to the power control unit, the communications port, the central processing unit and the readout unit.

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

8. The digital elevation knob device according to claim 1, wherein said computer housing is attached to said scope mount between the pair of flanges.

9. A method of calibrating the telescopic scope of a rifle using a digital elevation knob, comprising the steps of:

entering input parameters in a programmable computer mounted to the telescopic scope using a communication port and a keypad;

adjusting a target viewing element disposed inside of the telescopic scope and transferring a signal containing the degree of displacement of the target viewing element to the programmable computer;

processing the signal and the input parameters entered into the programmable computer; and

displaying processed information to the user of the telescopic rifle scope;

whereby the user of the telescopic rifle scope is supplied with information to properly adjust the telescopic rifle scope to accurately sight a specific target.

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

10. The method according to claim 9 wherein said entering input parameters step further comprises the steps of:

entering ammunition data comprising type of ammunition, weight of bullet, caliber of bullet, muzzle velocity of bullet and drag coefficient of bullet when fired;

entering scope model coefficients;

entering periodic updated software data;

entering ambient conditions data comprising temperature, wind velocity in compass direction, relative humidity, altitude and barometric pressure;

entering firearm coefficients comprising barrel length and muzzle break;

resetting the home position after the programmable computer is charged;

entering correctional coefficients if the user is off the mark during target practice;

entering measurement units; and

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

entering target data comprising elevation of target, direction of target and speed of target.

11. The method according to claim 9 wherein said target viewing element adjustment step further comprises:

rotating an adjuster knob that in turn rotates an adjuster screw positioned above the target viewing element;

determining the displacement of the target viewing element with a displacement sensing element; and

transferring the displacement signal from the displacement sensing element to the programmable computer.

12. The method according to claim 9 further comprising the step of measuring the cant of the firearm with a weapon lay sensor and transmitting a cant signal and a rifle inclination signal to the programmable computer.

13. The method according to claim 9, wherein said processing step further comprises:

LITMAN LAW OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

formatting the signals in a signal conditioning unit so that the signals may be read by a central processing unit;

transferring the formatted signals to the central processing unit through an input and output control unit;

transferring the input parameters to the central processing unit through the input and output control unit; and

processing the signals and input parameters with information retrieved from a data storage unit, said information comprising ballistic tables, operating system data, and application programs for trajectory and setup routines.

14. The method according to claim 9 further comprising the step of receiving input data from an external data source through an interface socket disposed on the programmable computer.

15. The method according to claim 14 further comprising the step of transmitting output data to the external data source through the interface socket.

LITMAN LAW OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

16. A digital riflescope device comprising:

a telescopic sight for a gun having a scope tube and a target viewing element disposed inside of the scope tube;

a horizontal adjustment knob disposed along the side of said telescopic sight for making wind and sight adjustments;

a generally cylindrical, rotating ribbed knob;

a non-rotating generally cylindrical scope mount having a longitudinal axis coincident with that of said ribbed knob, and a longitudinally arranged pair of flanges, said scope mount being adapted and configured for receiving said ribbed knob and mounting said knob to a rifle scope; and

a computer housing comprising a programmable computer, a display screen disposed on an upper front portion of said housing for indicating readout data, a plurality of push buttons disposed on a lower front portion of said housing for selection of functions and entering of numerical parameters, an interface plug for receiving an exterior data entry device, and a power source;

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000

whereby a rifleperson can enter data into the computer to obtain the optimum elevation setting for firing the gun at a target.

LITMAN LAW
OFFICES, LTD.
P.O. BOX 15035
ARLINGTON, VA 22215
(703) 486-1000